REMARKS

In the Office Action mailed May 20, 2003, the Examiner allowed Claims 33-37 and found that Claims 6-11 and 15-22 would be allowable, if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Examiner rejected the remaining claims as being anticipated by Nulman or obvious in view of Nulman and various secondary references. In the present Amendment and Response to Office Action, Applicants have amended Claims 1, 14, 26 and 30. Applicants respectfully request entry of the amendments and full consideration of the remarks contained herein.

Allowable Subject Matter

Applicants would like to thank the Examiner for indicating that Claims 33-37 are allowed and that Claims 6-11 and 15-22 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. As discussed below, however, Applicants respectfully submit that Claims 6-11 and 15-22 are allowable in their currently pending form.

Amendments to the Claims

Applicants have amended the claims to clarify further the subject matter that Applicants regard as the invention. In particular, Applicants have amended independent Claim 1 to recite "the computer software configured to collect data reflecting resource consumption from the plurality of devices and to compile and store said data," rather than "the computer software compiling and storing data relating to the consumption of resources by the tool." Support for this amendment can be found in the Application and claims as originally filed. *See, e.g.*, the Application, pp. 5-9 and Claims 3 and 6-11. Also, independent Claim 30 has been amended to recite that "monitoring and calculating are performed on the semiconductor process tool." Support for this amendment can also be found in the Application as originally filed. *See, e.g.*, the Application, pp. 5-6.

In addition, Claim 14 has been amended to recite that "the user defined parameters include parameters obtained from the plurality of process control devices," rather than that the "purge gas flows include a plurality of purge gas parameters at different parts of the semiconductor process

tool." Support for this amendment can be found in the Application as originally filed. *See, e.g.,* the Application, pp. 7-8. Claim 26 has been amended to recite "user selection of a report time resolution, wherein the report time resolution establishes a time interval represented by parameter values displayed in the report" rather than "user selection of a report resolution." Support for this amendment can also be found in the Application as originally filed. *See, e.g.,* the Application, p. 8. Consequently, Applicants respectfully submit that the amendments add no new matter and are fully supported by the Application as originally filed.

Rejections Under 35 U.S.C. § 112, second paragraph

The Examiner has rejected Claim 14 under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor, at the time that the application was filed, had possession of the claimed invention. In particular, the Examiner has stated that "it is not clear what is meant by 'the purge gas flows include a plurality of purge gas parameters at different parts of the semiconductor process tool', since there is no clear and specific indications disclosed in the Specification or Drawings."

While Applicants submit that an original claim can provide its own written description support, Applicants have nevertheless amended Claim 14 for greater clarity. Applicants note that Claim 14 no longer contains the language objected to by the Examiner. Consequently, Applicants respectfully submit that the rejection of Claim 14 under 35 U.S.C. § 112, first paragraph, is moot.

Rejections Under 35 U.S.C. § 102

The Examiner has rejected Claims 1-5 and 30 as being anticipated by Nulman (U.S. Patent No. 6,408,220). The Examiner stated that Nulman discloses, *inter alia,* "computer software residing in a memory of said tool controller, the computer software compiling and storing data relating to the consumption of resources by the tool."

Applicants respectfully traverse the rejections and submit that the pending claims are patentably distinct.

Applicants respectfully submit that the Examiner has misinterpreted Nulman. Applicants note that independent Claim 1 recites "at least one tool controller ... and computer software

residing in a memory of said tool controller, the computer software configured to collect data reflecting resource consumption from the plurality of devices and to compile and store said data." (emphasis added). Similarly, independent Claim 30 recites that "monitoring and calculating are performed *on the semiconductor process tool*." (emphasis added).

In contrast, Nulman teaches a "wafer fab chamber manufacturing environment" and a separate "computation environment" in which data processing occurs. *See, e.g.*, Nulman, Fig. 3 and Col. 6, lines 37-54 and Col. 6, line 67 to Col. 7, line 3. The wafer fab chamber manufacturing environment includes tools and tool controllers, including "microprocessors such as on board computers [and] computer operated software,".(Nulman, Col. 6, lines 44-46) for the wafer fabrication system, while the computation environment includes its own processors, memory and algorithms, or software instructions, for manipulating data. *See, e.g.*, Nulman, Fig. 3-6 and Col. 7, line 53 to Col. 8, line 13 and Col. 9, lines 33-65. Thus, Nulman does not teach that the microprocessors and software in the tool controllers are used to "collect data reflecting resource consumption" or to process that data, as recited in Claims 1 and 30.

Moreover, the computation environment can collect information, via a "power monitor environment," from a *plurality* of processing tools and, so, clearly is not located within any single one of these tools. *See* Nulman, Col. 14, line 12-22. As such, the software for collecting, compiling and storing data does not "resid[e] in a memory of said tool controller," as recited in Claim 1, rather, it resides in a central computation environment, which is outside of the wafer processing tool and the wafer fab chamber manufacturing environment containing the tool controllers. Consequently, Applicants respectfully submit that Nulman does not disclose all the limitations of Claims 1 or 30 and, so, does not anticipate those claims.

Advantageously, Applicants have found that by having the software stored within the tool controller, the existing monitoring hardware of a particular process tool can be utilized, rather than retrofitting the tools with additional and costly monitoring equipment. Applicants respectfully submit that the art of record does not disclose such an advantageous monitoring scheme.

Rejections Under 35 U.S.C. § 103

The Examiner has rejected various dependent claims as being obvious over Nulman in view of various secondary references. In particular, Claims 12, 13 and 29 have been rejected as being obvious over Nulman in view of Hirsch et al. (U.S. Patent No. 5,586,039); Claims 23-25, 27 and 28 as being obvious over Nulman in view of Oshelski et al. (U.S. Patent No. 5,586,059); Claim 26 as being obvious over Nulman in view of Snibbe et al. (U.S. Patent No. 6,496,200); and Claims 31 and 32 as being obvious over Nulman in view of Balasubramhanya et al. (U.S. Patent No. 6,368,975). In each case, the Examiner has stated that "Nulman discloses the invention, except" for various defiencies, which the Examiner has stated were supplied by a particular secondary reference.

Applicants respectfully traverse the rejections.

As discussed above, Applicants note that Nulman does not teach "at least one tool controller ... and computer software *residing in a memory of said tool controller*, the computer software configured to collect data reflecting resource consumption from the plurality of devices and to compile and store said data." As such, Applicants respectfully submit that Nulman does not teach all that has been asserted and that the rejections for obviousness are moot.

Nevertheless, while Applicants do not acquiesce in the Examiner's rejection, Applicants note that Claim 26 has been amended for greater clarity. Claim 26 now recites "user selection of a report time resolution, wherein the report time resolution establishes a time interval represented by parameter values displayed in the report" to more clearly indicate that "resolution" refers to the time interval represented by the data points that are displayed in a report. Consequently, Applicants submit that the rejection of Claim 26 over the combination of Nulman and Snibbe et al. is moot.

Accordingly, Applicants submit that the pending claims are allowable over the art of record. Applicants have not addressed the further anticipation and obviousness rejections of dependent claims as being moot in view of the amendments and remarks herein. However, Applicants expressly do not acquiesce in the Examiner's findings not addressed herein. Indeed, Applicants submit that the dependent claims recite further novel and non-obvious features of particular utility.

CONCLUSIONS

In view of the foregoing remarks, Applicants submit that the application is in condition for allowance and respectfully request the same. If some issue remains that the Examiner feels may be addressed by Examiner's amendment, the Examiner is cordially invited to call the undersigned for authorization.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

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Adeel S. Akhtar
Registration No. 41,394
Attorney of Record
Customer No. 20,995
(415) 954-4114

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